

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Sarah Schreier, Project Manager;
Environmental Cleanup Section I,
Remediation Division

Date: April 13, 2006

From: Larry Champagne; Technical Support Section, Remediation Division

Subject: Star Lake Canal NPL Superfund Site
Remedial Investigation Work Plan

The Natural Resource Trustees and I have completed our review of the subject document for this site and have the comments below.

General Comments:

1. It appears that all proposed samples will be collected from the area of interest and none from background locations. It is understood that background samples should not be used to screen-out COPECs in the EPA risk assessment process. However, background samples would contribute to the site characterization and should be collected.
2. It is inappropriate to identify intermittently inundated matrix within Molasses Bayou as "wetland soil" based solely upon the rationale (i.e., periodic inundation) provided. According to this logic, all intertidal areas with active sediment-based ecological communities would be "soil-based". All matrix material within Molasses Bayou should be categorized as sediment unless more comprehensive rationale regarding duration of inundation, in conjunction with assemblages of flora and faunal indicator species, can be provided. Similar clarification should also be provided for any bank or remnant dredge material described as "soil".
3. In order to eliminate a threatened/endangered species as being potentially present, an ERA should provide supporting documentation from a wildlife management agency to confirm the absence of the protected species on the site and/or include a convincing discussion of the lack of suitable habitat. It is not enough to simply state that no protected species are known to occur at a site. This is different from a statement that none are expected to occur based on the available habitat and the needs of a threatened/endangered species, particularly if this is supported by testimony from a local expert (e.g., academia). In no cases should a lack of visual observation of a protected species on the site be a sufficient justification alone. Although some discussion of suitable habitat and needs was provided, several

species were eliminated based on the lack of observation. Also see related specific comments.

4. It is stated that sediment data from prior TCEQ investigations was not usable for either nature and extent or risk assessment purposes because detection limits exceeded ecological screening benchmarks. However, it seems logical to utilize these data to assist in the identification of site COPECs and the determination of future sample locations, particularly where higher concentrations of COPECs were observed. Although this utilization is somewhat implied, it is not specifically stated. Please ensure that these data are to be used in this manner and revise the text accordingly to indicate that this data is not to be disregarded entirely for the Remedial Investigation (RI).

Specific Comments:

1. P. 1-2, Section 1.2 Objectives; TCEQ's ecological risk assessment guidance should also be listed under the potential SLERA guidance.
2. P. 3-6, Section 3.4.1 Threatened and Endangered Species; Please revise Table 3-2 to show the brown pelican as a Federal endangered species. This species is still listed as endangered on the Texas Gulf Coast although it may not be included in the Jefferson County list.
3. P. 3-8, Section 3.4.1 Threatened and Endangered Species; The statement that Brown pelicans would not be found near or onsite is incorrect. Pelicans are likely to use this area and the surrounding areas for feeding or loafing. Also, the justification for eliminating the White-faced Ibis is insufficient. Either provide a more convincing argument for elimination or assume this species is present. Please revise the text accordingly and add suitable surrogate species to the receptor list. If a receptor currently in use will act as a surrogate, please note that only NOAEL values should be used for that receptor.
4. P. 3-9, Section 3.4.2 Site Specific Receptors of Concern and Figure 3-3; In order to maximize exposure, it is preferred that a green heron or other smaller-bodied shorebird be used in place of the great blue heron.
5. P. 3-9, Section 3.4.2 Site Specific Receptors of Concern; The characterization of the muskrat exposure is incorrect. Muskrats are primarily aquatic animals, burrowing into the sediments of marshes or river banks or shorelines. They feed primarily on aquatic vegetation. Therefore they will be exposed to contaminants primarily through aquatic vegetation, surface water, and sediments, not soil as indicated. Please revise accordingly.
6. P. 3-9, Section 3.4.2 Site Specific Receptors of Concern and Figure 3-3; The characterization of the raccoon exposure is incorrect. The raccoon feeds on

aquatic prey (fish and benthic invertebrates) in addition to terrestrial prey. Thus its exposure to sediments needs to be evaluated in addition to its exposure to surface water and soil, both from incidental ingestion and from food chain transfer.

7. P. 3-10, Section 3.5 Applicable or Relevant and Appropriate Requirements (ARARs); The text here states that “no ARARs exist for evaluating effects on biota residing in sediments.” This appears to contradict the statement made on p.2-2 regarding the use of ER-Ls. Please clarify. Also, references to TCEQ ERA guidance should include the phrase “... and most recent updates”.
8. P. 3-11, Figure 3-2 and P. 3-12, Section 3.6.1 Exposure Pathways; The pathway from bank soil to mammals is identified as potentially complete but not evaluated. High percentages of incidental soil ingestion by raccoons and other mammals could be a significant part of the exposure, particularly if these soils (having originated from dredged sediments) house the highest COPEC concentrations. This pathway should be evaluated. There is also disagreement with the figure and the statement that “exposure of shorebirds and waterfowl to constituents in bank soil is shown as an incomplete pathway as these receptors are not expected to utilize this habitat.” Depending on the definition of bank soil (see below), shorebirds and waterfowl may utilize this habitat when it is inundated. Since this deposited dredge material is a known source of contamination and risk, potential exposure of all appropriate receptors should be assessed.
9. P. 3-12, Section 3.6.1 Exposure Pathways; The categorization of wetland soil is not acceptable based on the rationale provided. Periodic inundation is common to many sediment-dominated environments such as intertidal estuarine and lacustrine marshes. The definition for matrix type should be based upon common technical usage not unique to or limited to this RI. The document needs to clearly identify upland soil, bank soil, wetland soil, and sediment using standard definitions. As discussed below, the current distinction between sediment and wetland soil in this RI is problematic.

Figure 3-3 illustrates the confusion in the RI definitions of soil versus sediment. It clearly depicts the areas surrounding the canals as wetlands but then defines the substrate under the wetlands as soil since it is “only periodically inundated,” whereas sediments are defined as being “permanently inundated.” USFWS defines wetlands and their substrates as the following: ***“WETLANDS are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of the year.”*** (emphasis added)

Source: Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al FWS/OBS-79/31 December 1979.

Substrate that occurs along the banks of these water bodies and under wetland vegetation should be considered sediments and treated as such. Receptors foraging in these areas should be examined for sediment exposure and COPECs present in this substrate should be evaluated against sediment benchmarks. Please revise the RI to more accurately describe the matrix prevalent in Molasses Bayou marsh and adjacent the water bodies.

10. P. 3-14, Section 3.6.1 Assessment and Measurement Endpoints; The text identifies wetland soils in reference to measurement endpoints. See applicable comments above.
11. P. 6-2, Section 6.2 Field Sampling Plan; The referenced Appendix D did not appear to be included in this work plan.
12. P. 6-3, Section 6.2.2 Sample Type, Location, and Frequency; While sample numbers and locations are discussed in this section, it is unclear what type of sampling design was used for this RI. Samples do not appear to be evenly dispersed through the wetland along Star Lake Canal. There is an inlet area approximately half way down the length of the canal to the southeast that has no proposed sampling in or near it. This represents a data gap that needs to be addressed. The same situation applies to the pond in the extreme southeast corner of the site. As stated earlier, the text on page 2-2 indicates the existing historical data will be excluded entirely from the RI work and it is unclear if and how historical data may have been utilized in developing the proposed sampling plan. Please address the role of historical data in the current proposed sampling strategy. Also see applicable comments above regarding the term “wetland soil”.
13. P. 6-3, Section 6.2.2 and P. 6-6, Section 6.4 and SOP 004, P. 2, Section 3.2; Please elaborate on the purpose of the mid-depth and refusal-depth sediment samples. Also, please discuss how a 6-inch depth will be obtained with a grab sampler when the SOP states that penetration depth will not be more than a few centimeters. Finally, how will the significant differences in sampling methodology between the grab sampler and the Vibracore tube (e.g., blow-out from the grab) affect the comparisons of surface samples?
14. P. 6-4, Section 6.2.3 Sample Collection Objective and Location Rationale; The sample point configuration criterion for wetland soils identifies known dredged material banks and wetland areas of accumulated re-suspended sediment and/or erosion materials from the dredge site as the sole factors for sampling. The dredge material reflects the relocation of sediments originally contaminated in-situ. This same deposition that resulted in contaminated sediments within Jefferson Canal is also a potential transport and depositional mechanism that

justifies sampling Molasses Bayou. Please include primary deposition of contaminated sediments in the criteria for all of Molasses Bayou.

The existing rationale for selection and distribution of samples for the Molasses Bayou matrix, identified within the work plan as “wetland soils”, is inadequate. Please include a more detailed explanation. Also see applicable comments above regarding the term “wetland soil”.

15. P. 6-5, Figure 6-1 Proposed Sampling Locations Star Lake Canal Superfund Site; The central western portion of Molasses Bayou is devoid of samples but shows two consecutive interconnected open water bodies connected to the main channel. These appear to be potential primary sediment depositional areas. Please add a minimum of 2 samples in this area or provide rationale for omitting this area from sampling. Also see comment above regarding additional clarification on sampling design and data gaps.

The sample point configuration criteria references wetland soils. See applicable comments above.

16. P. 6-7, Section 6.4 Concentrations of Constituents in Sediments; Please provide additional justification of how five sediment samples collected from 14,700 feet of Star Lake Canal (averaging 3675 ft. between locations), four samples from 4600 feet of Jefferson Canal (averaging 1533 ft. between locations), and three samples from 9000 feet of Jefferson Canal (averaging 4500 ft. between locations) will be sufficient to adequately characterize the sediments in these canals.

The following comments were provided by Mr. Steven Childress of the TCEQ and pertain to review of the site-specific Quality Assurance Project Plan (QAPP) for the Remedial Investigation at the Star Lake Canal Federal Superfund Site.

1. In Section 2.1 “Project Organization and Roles and Responsibilities”, I am unable to locate the project organization chart referenced in the first paragraph as Figure 2-1. Please be advised that this organizational chart is a required QAPP element per Section 3.2.4 of the EPA QA/R-5 document entitled “EPA Requirements for Quality Assurance Project Plans”.
2. Under Section 2.4.1.6 “Sensitivity”, the last paragraph states that the laboratories will report detected results to the MDL for each sample result and results between the MDL and the reporting limit (RL) will be qualified as estimated with a “J” flag for organics and a “B” flag for metals. If the reporting limit (RL) as defined in this QAPP is synonymous with the method quantitation limit (MQL) as defined in the Texas Risk Reduction Program (TRRP) Rule (i.e. the lowest non-zero concentration standard in the laboratory’s initial calibration curve based on the final volume of extract or sample weight used by the laboratory), then the reporting conventions specified in this QAPP will substantively meet the data reporting requirements given in 30 TAC 350.54(h)(1) of the TRRP Rule. If the RL as defined in this QAPP is not synonymous with the MQL as defined above, then the labs will need to modify their reporting conventions in order to fully comply with the data reporting requirements specified in the TRRP Rule.
3. Again, in Section 2.4.1.6 “Sensitivity”, please be advised that 30 TAC 350.54(h)(2) required all non-detected results to be reported as less than the value of the sample quantitation limit (SQL) as defined in the TRRP Rule (i.e. the method detection limit adjusted to reflect sample-specific actions such as dilutions, use of a smaller aliquot for analysis, percent moisture for soil and sediment results, etc.), not the MDL as stated in the last paragraph of this section.
4. I have reviewed Section 2.6.3 “Laboratory Records” and believe that the laboratory records included most of the required “reportable data” as defined in the RG-366/TRRP-13 regulatory guidance *Review and Reporting of COC Concentration Data* with the exception of the Laboratory Review Checklist and the laboratory duplicate data. If the laboratory case narrative and associated exception report are sufficiently detailed in documenting any QC nonconformances and problems/anomalies, then the case narrative will essentially serve the same purpose as the Laboratory Review Checklist. However, if there is reason to believe that the level of detail provided in the case narrative will not be comparable to what would be provided in the TCEQ Laboratory Review Checklist, then my recommendation would be to revise Section 2.6.3 “Laboratory Records” to require the laboratories participating in this project to submit the Laboratory Review Checklist as part of the standard data package deliverable.

5. In Table 3-1 “Required Sample Containers, Preservation, and Holding Times for Surface Water and Sediment/Soil Samples”, the technical holding time for water sample matrices analyzed for TPH by Method TX 1005 is **14** days from sample collection to extraction and **14** days from extraction to analysis for aqueous samples that have been acid preserved to a pH of less than 2, (not 7 days).
6. Since the data validation summary report as described in Section 5.3 “Reconciliation with User Requirements” of this QAPP will contain a Usability Assessment portion which will evaluate the usability of the data in terms of meeting the project-specific DQOs, I believe that this “data validation summary report” is comparable in scope to the TRRP-13 Data Usability Summary (DUS) Report deliverable not only in documenting the results of the technical review and data validation but also in evaluating the ultimate usability of the data for the project.